

Patent Application

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Before the Board of Patent Appeals and Interferences

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JAN 28 2008

In re application of Joerg MOISEL

Confirmation No.: 5023

Appln. No.: 10/539,840

Art Unit: 2875

Filed: 12/12/2005

Examiner: Bao Q. Truong

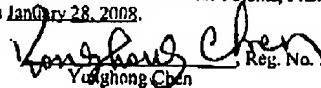
For: LED HEADLIGHT FOR A MOTOR VEHICLE

Attorney Docket No.: 3926.188

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Yonghong Chen Reg. No. 56,150

Hon. Commissioner for Patents
Alexandria, VA 22313-1450

APPEAL BRIEF

Sir:

This is an appeal from the final rejection in the Office action dated 07/23/2007. A Notice of Appeal was filed on 12/14/2007.

Appellants submit this *Appeal Brief*, including payment in the amount of \$510.00 to cover the fee for filing the *Appeal Brief*. Please charge the fee required for the *Appeal Brief* to deposit account No. 50-0951.

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Real Party in Interest:

This application is assigned to DaimlerChrysler AG of Stuttgart, Germany. The assignment has been recorded by the USPTO on 05/05/2006, at Reel No. 017589, Frame No. 0516.

Related Appeals and Interferences:

No related appeals or interference proceedings are currently pending which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

Status of Claims:

Claims 18 and 21-38 are rejected and are under appeal.

Status of Amendments:

Claim 20 was cancelled and claim 18 was amendment in the amendment submitted on September 14, 2007 in response to the final Office action. The amendment was indicated as being entered for the purpose of appeal in the *Advisory action* dated 11/13/2007. A *Notice of Appeal* was filed on 12/14/2007.

Summary of the Claimed Subject Matter:

Independent claim 18 of the instant application recites a vehicle headlight, comprising:

multiple LEDs (1) provided on a carrier and organized into a group arrangement (5),
and

at least one optical element functioning as a common collection lens (2) (see, e.g., Figs. 1-3 and paragraphs [00033] & [00034] of the specification),

wherein the group arrangement has an asymmetric design arrived at by starting with an overall symmetric design and providing therein at least one area with non-functional or missing LEDs (see, e.g., Fig. 3 and paragraph [00038] of the specification),

wherein the LEDs are LED-chips disposed in a region of a focal plane of the common collection lens (see, e.g., lines 4-5 in paragraph [00010] of the specification),

wherein the group arrangement (5) and optical element (2) are assembled into a LED-

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module (3) (see, e.g., Figs. 1-3), and

wherein the vertical angle of beam spread ϕ of the headlight is less than 5° and the horizontal angle of beam spread ϕ of the vehicle headlight lies in the range of less than 20° (see, e.g., paragraph [00036] of the specification).

Grounds of Rejection to be Reviewed on Appeal

1. Whether or not claims 18, 21-30, 32-34, and 36-38 are patentable over Begemann et al. (WO 2001/01037, hereinafter Begemann) in view of Chen et al. (US 6,520,669, hereinafter Chen) under 35 U.S.C. § 103(a).
2. Whether or not claims 31 and 35 are patentable over Begemann et al. and Chen et al. and further in view of Moriyama et al. (US 2004/0252501, hereinafter Moriyama) under 35 U.S.C. § 103(a).

Argument:

**CLAIMS 18, 21-30, 32-34, AND 36-38 ARE PATENTABLE
OVER BEGEMANN IN VIEW OF CHEN UNDER 35 U.S.C. § 103(A)**

According to Begemann, the headlamp sends out several cones of rays, which have different spectral (color specific) characteristics. The different spectral characteristics should be adjusted to different sensitivity of the eyes (see page 3, lines 12-32). This aspect of differentiation of the applied LEDs is not the subject matter of the present invention. According to the present invention, the applied LEDs are basically not differentiated. But some of the individual LEDs are non-functional or missing for producing an asymmetric array arrangement.

Page 7, lines 3-8 of Begemann describe that by switching on and off a number of opto-electronic elements 11, 12, 13, 14, the light beams generated by the light sources 4, 5 can be relatively readily subdivided into one or more beam segments 6, 6'; 7, 7' having substantial different spectral characteristics. However, Begemann does not disclose that some of the opto-electronic elements 11, 12, 13, 14 should be non-functional or missing in order to arrive at an asymmetric design from an overall symmetric design as recited in claim

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18 of the instant application. The opto-electronic elements 11, 12, 13, 14 of Begemann may be selectively switched on and off, but not non-functional or missing.

The Examiner has stated in the "Response to Arguments" on page 7 of the final Office action that Begemann teaches that the LEDs (Fig. 2: 11, 12, 13, 14) have an asymmetric arrangement (see page 6, lines 7-10). However, this quoted passage only describes that the number of opto-electronic elements 11, 12, 13, 14 in the light source 4 does not have to be equal to that in the light source 5 and that the opto-electronic elements 11, 12, 13, 14 does not have to be provided on a flat substrate, but it may alternatively be provided on a curved substrate. It is not clear how this passage has anything to do with the asymmetric group arrangement of the LEDs within a LED-module according to the present invention.

The Examiner has admitted that Begemann does not teach a lens. However, the Examiner has stated that Chen teaches at least one optical element functioning as a common collection lens (Fig. 8: 92). It is noted that Fig. 8 of Chen shows a central convex lens 92, the concave surface of which is facing a side opposite to the LEDs 84'. The LEDs 84' are thus not possible to be located in the focal plane of the central convex lens 92. As described in paragraph [00034] of the specification of the instant application, the planar array 5 is projected through the lens 2 and the projection leads to an enlarged depiction or projection of the array 5. In contrast, the central convex lens 92 in Chen enables the light emitted to be focused (see column 7, lines 4-5), meaning a reduced projection, not an enlarged projection. Also, Chen does not disclose a LED-module with a group of LEDs and an optical element formed as a common collection lens.

In addition, neither Begemann nor Chen discloses or provides any hint toward the specific formation of the beam spread with the specific angles in horizontal and vertical directions. Page 3, lines 23-29 of Begemann et al., cited by the Examiner, disclose different aspects regarding the color distribution inside the light cone of the headlight, but not the spatial boundary, especially not the angles in the horizontal and vertical directions of the beam.

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It is, therefore, believed that none of the cited references Begemann and Chen or any combination thereof discloses all the features of amended claim 18. Claim 18 is, therefore, believed to be patentable over the cited prior art and since all the dependent claims are ultimately dependent on claim 18, they are believed to be patentable as well.

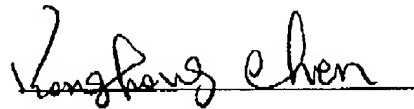
**CLAIMS 31 AND 35 ARE PATENTABLE OVER BEGEMANN AND
CHEN AND FURTHER IN VIEW OF MORIYAMA UNDER 35 U.S.C. § 103(A).**

Claims 31 and 35 are believed to be patentable because they are dependent on claim 18.

In view of the forgoing, the honorable Board is therefore respectfully urged to reverse the final rejections of the Primary Examiner.

The Commissioner is hereby authorized to charge any fees which may be required at any time during the prosecution of this application without specific authorization, or credit any overpayment, to Deposit Account Number 50-0951.

Respectfully submitted,



Dated: January 28, 2008

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Claims Appendix:

18. A vehicle headlight, comprising:
- multiple LEDs provided on a carrier and organized into a group arrangement,
 - and
 - at least one optical element functioning as a common collection lens,
 - wherein the group arrangement has an asymmetric design arrived at by starting with an overall symmetric design and providing therein at least one area with non-functional or missing LEDs,
 - wherein the LEDs are LED-chips disposed in a region of a focal plane of the common collection lens,
 - wherein the group arrangement and optical element are assembled into a LED-module, and
 - wherein the vertical angle of beam spread ϕ of the headlight is less than 5° and the horizontal angle of beam spread ϕ of the vehicle headlight lies in the range of less than 20° .
21. The vehicle headlight according to Claim 18, wherein an optically transparent material is cast into the LED-module.
22. The vehicle headlight according to Claim 18, wherein the LED-chips are hard wired together and this hard wiring or hard circuit is bonded to the carrier.
23. The vehicle headlight according to Claim 18, wherein LED-chips are arranged in the LED-module in a hexagonal, quadratic or square pattern.
24. The vehicle headlight according to Claim 18, wherein the asymmetric group arrangement exhibits a design which corresponds to an asymmetric distribution of the vehicle headlight beam.

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25. The vehicle headlight according to Claim 18, wherein the LED-chip of the LED-module emits exclusively IR radiation, or IR radiation with visible light, or exclusively visible light.
26. The vehicle headlight according to Claim 18, wherein a part of the LED-chip is provided with only IR emitting and another part with visible light emitting LEDs.
27. The vehicle headlight according to Claim 26, wherein these IR and visible LEDs are arranged alternating in the asymmetric group arrangement.
28. The vehicle headlight according to Claim 18, wherein a part of the LED-chip emits only IR radiation and another part only visible light, and the one part is separated from the other part in an asymmetric group arrangement.
29. The vehicle headlight according to Claim 18, comprising multiple LED-modules, which are arranged in one plane.
30. The vehicle headlight according to Claim 29, wherein the LED-modules contact each other.
31. The vehicle headlight according to Claim 30, wherein the LED-modules are releasably connected with each other.
32. The vehicle headlight according to Claim 29, wherein the LED-modules are provided upon a common carrier which is shaped or has circuitry which is vehicle-specific.
33. The vehicle headlight according to Claim 18, wherein multiple LED-modules are provided, which corresponds to the curvature of a curved vehicle surface.
34. The vehicle headlight according to Claim 33, wherein the LED-modules contact each other.

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35. The vehicle headlight according to Claim 34, wherein the LED-modules are releasably connected with each other.
36. The vehicle headlight according to Claim 33, wherein the LED-modules are provided upon a common carrier which is shaped or has circuitry which is vehicle-specific.
37. The vehicle headlight according to Claim 18, wherein multiple LED-modules are associated with a common supplemental optical element, which cooperates collectively with the lenses of each module.
38. The vehicle headlight according to Claim 18, wherein LED-chips are laser diodes or laser diodes with vertical resonators.

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Evidence Appendix:

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or any other evidence has been entered
by the Examiner and relied upon by appellant in the appeal.

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Related Proceedings Appendix:

No prior or pending appeals, interferences or judicial proceedings are in existence which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal. Accordingly, no copies of decisions rendered by a court or the Board are available.

Related Proceedings Appendix: Page 1 of 1

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